USG Portable Colour Doppler with 3 Probes

S. N.	Purchaser's Specifications
	USG Portable Colour Doppler with 3 Probes
	Manufacturer
	Brand
	Type/Model
	Country of Origin
1	**Description of Functions**
1.1	A general purpose notebook-type colour Doppler ultrasound imaging system.
2	**Operational Requirements**
2.1	It shall operate on AC power supply as well as built in rechargeable battery. The machine is intended to be carried to the field or the patient ward with the inbuilt battery system to examine patients who could not come to USG room.
3	**System Configurations**
3.1	Portable colour Doppler ultrasound imaging system, 1unit.
3.2	1 unit of broad bandwidth of 2.8 - 5MHz, convex array probe for OB/GYN and abdominal application.
3.3	1 unit of broad bandwidth of 5 - 10 MHz, linear array probe for small part and superficial scanning application.
3.4	1 unit of broad bandwidth of 5 - 8 MHz, endo-vaginal probe for OB/GYN endo-vaginal scanning application.
3.5	1 unit of Black & White thermal printer.
4	**Technical Specifications**
4.1	The machine is intended to be carried to the field or the patient ward with the inbuilt battery system to examine patients who could not come to USG room. It shall comply with the following requirements for this purpose:
4.2	The unit shall be lightweight and easy to carry, the total weight including 1 probe and battery shall not be more than 5kg.
4.3	The unit must be sturdy, "drop safe", resistant to breakage & damage on minor fall or hit against the wall or hard surface.
4.4	Shall have long lasting built-in rechargeable battery which shall support up to 2 hours of routine ultrasound examinations.
4.5	This machine shall come with main unit, 3 units of probes, 2 built-in rechargeable Lithium ion battery packs and 1unit of black and white thermal printer.
4.6	It shall come with a custom made trolley on castors to hold the main unit on top with provision of a probe holder and drawers for storage of 3 probes, printer and ultrasound gel.
4.7	Main applications: OB/GYN, abdominal, small parts, cardiac and vascular.
4.8	**Main unit:**
4.9	Display not less than 30cm (12") colour LCD display
4.10	Full alphanumeric keyboard.
4.11	Probe connector: at least 2 probe connector.
4.12	Shall come with 1 unit of broad bandwidth of 2 - 5MHz, not less than 30cm scan depth, convex array probe for OB/GYN and abdominal application.
4.13	Shall come with 1 unit of broad bandwidth of 5 - 10 MHz, not less than 9cm scan depth, linear array probe for small part and superficial scanning application.
4.14	Shall come with 1 unit of broad bandwidth of 5 - 8 MHz, not less than 10cm scan depth, endo-vaginal probe for OB/GYN endo-vaginal scanning application.

Avinash
Radiographer

S. N.	Purchaser's Specifications
4.15	The system shall accept most of the common probe types of: convex array, linear array, phased array.
4.16	Scan modes: M-mode, B-mode and 2-D.
4.17	System shall be incorporated with English operation menu and reporting.
4.18	With digital broad bandwidth multi-frequency imaging capability.
4.19	With Doppler angle and angle correction.
4.20	Frame rate: not less than 50fps.
4.21	Display depth: minimum 30cm.
4.22	Matrix size: 512 x 512 x 8bit.
4.23	Grayscale levels: 256.
4.24	**The machine shall include the following functions:**
4.25	Programmable pre-set examination protocols store common setting related to image display/adjustment, annotation.
4.26	Obstetric analysis: BPD (biparietal diameter), CRL (crown-rump length), AC (abdominal circumference), HC (heart circumference), FL (foetal length), GS (gestation sac), GA (estimation of gestation age), foetal weight, heart rate and etc.
4.27	OB/GYN reporting.
4.28	Small part analysis.
4.29	Cardiac analysis with intima medial thickness measurement.
4.30	Velocity Colour to detect colour flow with PW & CW Doppler.
4.31	Body markers.
4.32	Time & slope for M-Mode.
4.33	Contrast with 8 - 10 steps adjustment.
4.34	Image pan, zoom, freeze, text annotation.
4.35	Focus: 4-point adjustment.
4.36	Automatic gain control.
4.37	Near and far Gain adjustment.
4.38	With pre- and post- processing.
4.39	With tissue harmonic imaging.
4.40	With tissue optimization function.
4.41	With function to reduce patch noise and other image artefacts without compromising quality of images.
4.42	With multi-beam imaging.
4.43	With clear visual of biopsy needle position.
4.44	With dual and duplex imaging.
4.45	Dynamic range, selectable up to approximately 165dB.
4.46	Image storage: Shall be able to store still and video images, shall be able to store about 1000 images on main unit.
4.47	Cine memory of 250 or more frames for cine loop playback.
5	**Accessories, Spare Parts and Consumables**
5.1	All standard accessories/consumables/parts (including 2 bottles of ultrasound gel) required for the proper operation of the above item shall be included in the offer. Bidders shall specify, in a separate Excel worksheet, the quantity and details of any items included in this offer which have not been specified in this Technical Specifications Form.
5.2	All standard Maintenance tools and cleaning /lubrication materials where applicable shall be included. Bidders shall specify, in a separate Excel worksheet, the quantity and details of any items included in this offer which have not been specified in this Technical Specifications Form.

Avinash,
Radiographer

S. N.	Purchaser's Specifications
6	**Operating Environment**
6.1	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.
7	**Standards & Safety Requirements**
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices **AND**
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.
7.3	Electrical safety conforms to standards for Electrical Safety IEC 60601-2-37 Medical electrical equipment – Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment.
8	**User Training**
8.1	The Supplier shall conduct user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment, as well as routine checks and maintenance expected by users.
9	**Warranty**
9.1	Comprehensive warranty for 2 years after acceptance.
10	**Maintenance Service During Warranty Period**
10.1	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.
11	**Installation and Commissioning**
11.1	Supplier must accomplish proper installation & commissioning of equipment on site.
12	**Documentation**
12.1	User (Operating) manual in English.
12.2	Service (Technical / Maintenance) manual in English.
12.3	List of important spare parts and accessories with their part number and costing.
12.4	Certificate of calibration and inspection from factory.

Avinash
Radiographer